APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,907	09/20/2005	Habin Lee	36-1937	4685

23117   7590   03/28/2008

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EXAMINER
DONABED, NINOS J

ART UNIT	PAPER NUMBER
2144	

MAIL DATE	DELIVERY MODE
03/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/549,907	LEE ET AL.
	Examiner	Art Unit	
	Ninos Donabed	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _20 September 2005_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-23_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-23_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _09/20/2005_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _11/30/2007_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21 and 22 are rejected under 35 U.S.C. 101.

Claim 21 is rejected under 35 U.S.C. 101 because it is geared towards "signal", failing to fall within a statutory category of invention. Therefore, the claims are geared towards nonstatutory subject matter under 35 U.S.C. 101.

Claim 22 is rejected under 35 U.S.C. 101 because it is geared towards "software per se", failing to fall within a statutory category of invention. Applicant's disclosure contains no explicit definition for the term "workflow engine architecture", and in the context of the disclosure and claims, one of ordinary skill would interpret the "workflow engine architecture" as a software application. Therefore, the claims are geared towards nonstatutory subject matter under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 4 and 5 recite the limitation **"delegate agent "** in their respective claims.

There is insufficient antecedent basis for this limitation in the claim.

Claims 8, 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

4.   Regarding Claim 8, the term "**permanent storage**" is indefinite because it is not

apparent what type of storage is being claimed.

5.   Regarding Claim 22, the term "workflow case base" is unclear and it is not know

what this encompasses.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed
> publication in this or a foreign country or in public use or on sale in this country, more than one year prior to
> the date of application for patent in the United States.

7.   Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Ebin, **United**

States Patent Application Number 2002/0037767.

Regarding **Claim 17,**

Ebin discloses a computer program product comprising a component in an on-line gambling application. **(See abstract and Paragraphs [0005]-[0008], Ebin discloses a component in a online gambling application)**

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-8, 11-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolp, "A Goal-based organizational perspective on Multi-Agent Architectures" in view of Chu et al., **(United States Patent Number 6,006,331).**

Regarding **Claim 1**,

Kolp teaches a method of recovering the status of a collaboration between a plurality of component agents in a multi-agent systems architecture, the method comprising: **(See abstract and pages 132 – 134, Kolp teaches a plurality of component agents in a multi-agent systems architecture)**

Kolp further teaches processing collaboration information forwarded by a mediator agent for each component agent; **(See pages 132 - 134, Kolp teaches processing collaboration information forwarded by a mediator agent for each component agent)**

Kolp does not explicitly teach maintaining a collaboration processing status information record derived from the collaboration information provided by each collaborating agent to the mediator agent.

Kolp does not explicitly teach in the event that a device which affects the collaboration suffers an event which causes one or more component agents to lose its collaboration status, recovering the collaboration status using one or more of said collaboration processing status information records.

Chu teaches maintaining a collaboration processing status information record derived from the collaboration information provided by each collaborating agent to the mediator agent; and **(See abstract and Column 16 Lines 10 - 34, Chu teaches that a record is kept by the server of the individual tokens for each client)**

Chu teaches in the event that a device which affects the collaboration suffers an event which causes one or more component agents to lose its collaboration status, recovering the collaboration status using one or more of said collaboration processing status information records. **(See abstract and Column 17 Line 66 – Column 18 Line 44, Chu teaches recovering a session, after a client crashes, with use of the saved token in the client which is recognizable by the server)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have known to combine Kolp with Chu because both deal with computer architectures which include a mediator and other agents. The advantage of Chu is "the server permits the client to immediately relog onto the server without the client having to wait for its entry in the dynamic directory maintained by server to time

out and be deleted by the server. The client automatically relogs back into the server

without user intervention by using the cached information." **(See abstract and Column**

1.)

Regarding **Claim 2**,

Kolp and Chu teach a method as claimed in claim 1, wherein the mediator agent

is arranged to register its mediation service with an administration agent of any multi-

agent platform. **(See page 134, Kolp.)**

Regarding **Claim 3**,

Kolp and Chu teach a method as claimed in claim 2, wherein said component

agents subscribe to the mediation service prior to said step of recovering the

collaboration status. **(See abstract and Column 3 Line 66 – Column 4 Line 43, Chu.)**

Regarding **Claim 4**,

Kolp and Chu teach a method as claimed in claim 1, wherein if a first component

agent delegates its role to at least one other delegate component agent, the mediator

agent maintains status information on the role of each at least one other delegate

component agent. **(See abstract and Column 16 Lines 10 - 34, Chu)**

Regarding **Claim 5**,

Kolp and Chu teach a method as claimed in claim 1, wherein the mediator agent

maintains status information on the role of all delegate agents. **(See abstract and**

Column 16 Lines 10 - 34, Chu.)

Regarding **Claim 6**,

Kolp and Chu teach a method as claimed in claim 1, wherein the collaboration

between said plurality of agents is defined by an interaction plan comprising a global

plan and a local plan, wherein the global plan specifies overall interaction steps for each

component agent participating in the collaboration and the local plan specifies each

collaboration activity for each participating component agent. **(See Figures 2 and 5,**

and Column 8 Lines 1-60 and Column 14 Line 58 – Column 15 Line 35, Chu.)

Regarding **Claim 7**,

Kolp and Chu teach a method as claimed in claim 1, wherein said collaboration

information forwarded to the mediator agent comprises the execution state of a

component agent's local plan. **(See Column 8 Lines 1-42, Chu.)**

Regarding **Claim 8**,

Kolp and Chu teach a method as claimed in claim 7, wherein the component

agent does not store an execution state of that component agent's local plan instance in

permanent storage. **(See Column 3 Lines 5- 64, Chu.)**

Regarding **Claim 11**,

Kolp teaches an apparatus arranged to recover the status of a collaboration

between a plurality of component agents in a multi-agent architecture, the apparatus

comprising: **(See abstract and pages 132 – 134, Kolp teaches a plurality of**

component agents in a multi-agent systems architecture)

Kolp teaches an at least one processor arranged to process collaboration

information forwarded by a mediator agent for each component agent; **(See pages 132**

- 134, Kolp teaches processing collaboration information forwarded by a mediator

agent for each component agent)

Kolp does not explicitly teach storage means arranged to maintain a

collaboration processing status information record derived from the collaboration

information provided by each collaborating agent to the mediator agent.

Kolp does not explicitly teach in the event that a device which affects the

collaboration suffers an event which causes one or more component agents to lose its

collaboration status, means to provide information derived from said one or more of said

collaboration processing status information records in a form suitable for updating each

component agent affected by the event with current collaboration status information.

Chu teaches storage means arranged to maintain a collaboration processing

status information record derived from the collaboration information provided by each

collaborating agent to the mediator agent; and **(See abstract and Column 16 Lines 10**

- 34, Chu discloses that a record is kept by the server of the individual tokens for

each client.)

Chu teaches in the event that a device which affects the collaboration suffers an event which causes one or more component agents to lose its collaboration status, means to provide information derived from said one or more of said collaboration processing status information records in a form suitable for updating each component agent affected by the event with current collaboration status information. **(See abstract and Column 17 Line 66 – Column 18 Line 44, Chu discloses recovering a session, after a client crashes, with use of the saved token in the client which is recognizable by the server.)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have known to combine Kolp with Chu because both deal with computer architectures which include a mediator and other agents. The advantage of Chu is "the server permits the client to immediately relog onto the server without the client having to wait for its entry in the dynamic directory maintained by server to time out and be deleted by the server. The client automatically relogs back into the server without user intervention by using the cached information." **(See abstract and Column 1.)**

Regarding **Claim 12**,

Kolp teaches a mediator agent arranged to provide a mediation service to recover the status of a collaboration between a plurality of component agents in a multi-agent systems architecture, the mediator agent comprising: **(See abstract and pages**

132 – 134, Kolp teaches a plurality of component agents in a multi-agent systems architecture)

Kolp teaches means to receive and store collaboration information provided by each component agent; **(See pages 132 - 134, Kolp teaches processing collaboration information forwarded by a mediator agent for each component agent)**

Kolp does not explicitly teaches means to update the collaboration information to generate at least one processing status information record.

Kolp does not explicitly teaches in the event that a device which affects the collaboration suffers an event which causes one or more component agents to lose its collaboration status, recovering the collaboration status using one or more of said collaboration processing status information records.

Chu teaches means to update the collaboration information to generate at least one processing status information record; and **(See abstract and Column 16 Lines 10 - 34, Chu discloses that a record is kept by the server of the individual tokens for each client)**

Chu teaches in the event that a device which affects the collaboration suffers an event which causes one or more component agents to lose its collaboration status, recovering the collaboration status using one or more of said collaboration processing status information records. **(See abstract and Column 17 Line 66 – Column 18 Line 44, Chu discloses recovering a session, after a client crashes, with use of the saved token in the client which is recognizable by the server)**

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have known to combine Kolp with Chu because both deal with

computer architectures which include a mediator and other agents. The advantage of

Chu is "the server permits the client to immediately relog onto the server without the

client having to wait for its entry in the dynamic directory maintained by server to time

out and be deleted by the server. The client automatically relogs back into the server

without user intervention by using the cached information." **(See abstract and Column**

1.)

Regarding **Claim 13**,

Chu teaches a component agent arranged to provide recovery information to a

mediator agent, the component agent having means to forward information indicating its

local interaction plan state to a mediator agent, the mediator agent as claimed in claim

12. **(See rejection to claim 12, abstract, and Column 7 Line 38 – Column 8 Line 42,**

Chu teaches that server can store client data and computer programs and also

that the unique token information of each client is kept in the server for use when

a malfunction takes place)

Regarding **Claim 14**,

Chu discloses a component agent arranged to provide recovery information to a

mediator agent, the component agent having means to store information indicating its

local interaction plan state and to forward information on said interaction state to a

mediator agent. **(See abstract and Column 7 Line 38 – Column 8 Line 42, Chu**

teaches that server can store client data and computer programs and also that

the unique token information of each client is kept in the server for use when a

malfunction takes place)

Regarding **Claim 15**,

Claim 15 list all the same elements of **claim 1**, but in computer program product

form rather than method form. Therefore, the supporting rationale of the rejection to

claim 1 applies equally as well to **claim 15**.

Regarding **Claim 16**,

Kolp teaches a computer program product comprising a component in an on-line

auction application. **(See abstract and page 132, Kolp teaches a component in an**

online auction application.)

Regarding **Claim 18**,

Claim 18 list all the same elements of **claim 1**, but in network form rather than

method form. Therefore, the supporting rationale of the rejection to **claim 1** applies

equally as well to **claim 18**.

Regarding **Claim 19**,

Claim 19 list all the same elements of **claim 11**, but in network form rather than

apparatus form. Therefore, the supporting rationale of the rejection to **claim 11** applies

equally as well to **claim 19**.

Regarding **Claim 20**,

Claim 20 list all the same elements of **claim 1**, but in multi-agent architecture

form rather than method form. Therefore, the supporting rationale of the rejection to

claim 1 applies equally as well to **claim 20**.

10.   Claims 9, 10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kolp, "A Goal-based organizational perspective on Multi-Agent Architectures" in

view of Traversat (United States Patent Number 6,941,410.)

Regarding **Claim 9**,

Kolp teaches a method of delegating between a first component agent arranged

to perform a predetermined role and another agent in a multi-agent architecture, the

component agent and the other agent arranged to communicate via a mediator agent,

the method comprising the steps of: **(See abstract Kolp.)**

Traversat teaches sending a request message from the first component agent to

a mediator agent for delegation to another agent; forwarding the delegation request

message to the other agent by the mediator agent; **(See abstract, column 3 line 23 to**

column 4 line 45, Traversat teaches a first component connecting to a mediator agent and informing the mediator agent.)

receiving the delegation request at the other agent; processing the delegation request and providing an indication to the mediator agent that the delegation request has been accepted; **(See abstract, column 3 line 17 to column 5 line 45, Traversat teaches processing the request.)**

transferring from the mediator agent, information comprising a local workflow case to the other agent from the first component agent. **(See abstract, column 4 line 13 to column 5 line 55, Traversat teaches transferring information from a mediator agent to another agent.)**

Traversat does not explicitly teach a multi-agent architecture.

Kolp teaches a multi-agent architecture. **(See Kolp.)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have known to combine Kolp with Traversat because both deal with computer architectures. The advantage of Traversat is "It's thus desirable to be able to separate an application from the rest of the complex operating system, and persist it somewhere on the net, where it is protected from the complex, thick client system." **(See abstract and Column 1.)**

Regarding **Claim 10**,

Kolp teaches a method as claimed in claim 9, wherein prior to said step of forwarding the delegation request, the method further includes the steps of:

retaining all messages at the mediator agent until the other agent is launched;

and **(See abstract, and column 2 line 24 - column 3 line 36, Traversat)**

subscribing the mediator agent to the other agent. **(See abstract, and column 4 line 24 - column 5 line 21, Traversat)**

Regarding **Claim 21**,

Kolp teaches a signal comprising a service subscription message arranged to subscribe a component message to a mediator service supported by a mediator agent, the mediation service comprising a method delegating between a first component agent arranged to perform a predetermined role and another agent in a multi-agent architecture as claimed in claim 10. **(See abstract, and column 3 line 24 - column 4 line 56, Traversat)**

11.   Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah (United States Patent Number 6,640,238).

Regarding **Claim 22**,

Bowman-Amuah teaches a workflow engine architecture arranged to be embedded into a component agent, the workflow engine architecture comprising:

a scheduler; **(See column 119 line 15 – column 121 line 24, Bowman-Amuah teaches a scheduler.)**

a task manager; **(See column 120 line 35 – column 122 line 14, Bowman-Amuah teaches a task manager.)**

a state manager; **(See column 104 line 43 – column 106 line 24, Bowman-Amuah teaches a state manager.)**

a library; and **(See column 104 line 23 – column 106 line 24, Bowman-Amuah teaches a library.)**

a workflow case base. **(See column 119 line 15 – column 121 line 24, Bowman-Amuah teaches a workflow case base.)**

Bowman-Amuah does not explicitly teach a "tool" library. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have known that a library could includes tools because common computer related libraries include tools.

Regarding **Claim 23**,

Bowman-Amuah teaches a method of restarting a local workflow case dynamically given by a mediator agent, the method comprising:

validating of received workflow case from a mediator agent; **(See column 62 line 10 – 64 line 15, Bowman-Amuah teaches verifying the validity of received workflow case.)**

storing the valid workflow case into local workflow case base; and **(See column 53 line 10 – column 55 line 25, Bowman-Amuah teaches storing valid workflow case.)**

synchronising the local workflow case with global workflow case of the mediator

agent by executing the buffered messages from a mediator agent. **(See column 50 line**

25 to column 53 line 56, Bowman-Amuah teaches synchronizing local and global

workflow.)

Bowman-Amuah does not explicitly teach verifying the validation.

However, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to have known that verifying the validity of received workflow

would be included in the verifying steps presented in Bowman-Amuah because the

service validates the integrity of the received packets and buffers.

Conclusion

12. Any response to this Office Action should be **faxed** to (571) 272-8300 or **mailed**

to:

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Hand-delivered responses should be brought to
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, Virginia 22314

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to NINOS DONABED whose telephone number is

(571)270-3526. The examiner can normally be reached on Monday-Friday, 7:30 AM-

5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. D./
Examiner, Art Unit 2144
/William C. Vaughn, Jr./
Supervisory Patent Examiner, Art Unit 2144